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The species of *Marietta* and a new *Centrodora* from South Africa (Hymenoptera: Aphelinidae)

by

D. P. ANNECKE and H. PATRICIA INSLEY

Plant Protection Research Institute, Pretoria

Eight South African species of *Marietta* Motschulsky, 1863 are dealt with. Five are described as new, namely *intermedia*, *taeniola*, *hispida*, *nebulosa* and *asaphia*; one, *marchali* Mercet, is a new record for southern Africa; the remaining two are *exitiosa* Compere (with which *habrolepidis* Ghesquiere, 1960 is synonymized) and *connecta* Compere. A key is given for separating the females. *Centrodora crocata* spec. nov. is described from Natal: it is parasitic in the eggs of a cicadellid pest of wattle.

INTRODUCTION

In this paper six species of *Marietta* Motschulsky, 1863 are added to the two which are at present known from South Africa. Five of these are described as new species from material reared from coccoid-infested plant material collected in South Africa. The sixth is a species originally described from Madagascar and since recorded from West Africa. A description is also given of an apparently new species of *Centrodora* Foerster, 1878—the second from South Africa. This is a species of some value to forestry, for it was submitted for determination as a parasite of the eggs of a cicadellid pest of young wattle trees in Natal.

In the descriptions of the *Marietta* species that follow, we have referred to the fifth antennal segment as the first segment of the club. In all the species studied the fifth and sixth antennal segments are broadly united and lack the distinct constriction usual between funicle and club; in the male of one species, the septum separating the last two antennal segments is vestigial or even absent (*cf* fig. 3). We have not considered it useful, at this stage of our knowledge of these aphelinids, to reconsider the value of the name *Perissopterus* Howard, 1895 which is generally regarded (Ferrière, 1965) as a synonym of *Marietta*.

Types of species described here as new will be deposited in the National Collection of Insects, Plant Protection Research Institute, Pretoria; where sufficiently long series of paratypes are available, some will be placed with British Museum (Natural History), London, and United States National Museum, Washington.

Marietta connecta Compere

Marietta connecta Compere, 1936: 307, 308; Annecke & Insley, 1971: 35.

This species is readily recognizable by its uniformly infuscated fore wing. It is widespread in South Africa and was described from specimens collected in Durban, Pretoria, Cape Town and Salt River, C.P. Unpublished records of material at hand

include many localities in the Republic's four provinces, and coccoids from which this hyperparasite was reared include the following:— Lacciferidae: *Tachardina affluens, T. africana, T. brachystegiae, T. gripha, T. karroo;* Coccidae: *Coccus ehretiae, C. hesperidum, Idiosaissetia peringueyi, Pulvinaria iceryi;* Pseudococcidae: *Distichlicoccus* sp., *Nipaecoccus graminis, Octococcus africanus, O. pentziae;* also a number of undetermined mealybugs and lac insects.

Marietta exitiosa Compere, figs 1–3

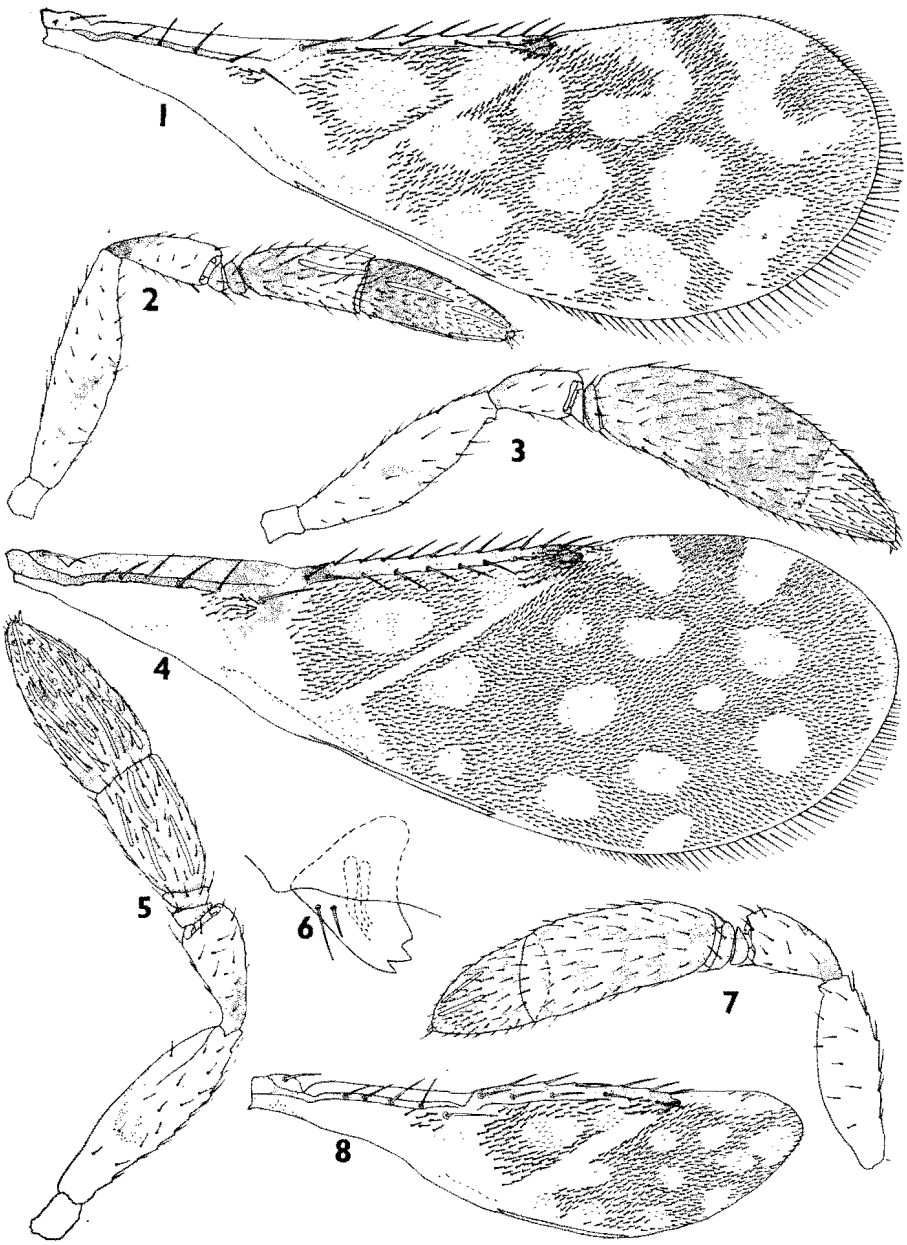
Marietta exitiosa Compere, 1936: 307, 321–3; Ghesquière, 1960: 5; Rosen, 1962: 351; 1966: 54; 1967: 268; Annecke & Insley, 1971: 35 (for African references).
Marietta habrolepidis Ghesquière, 1960: 2–5; Ferrière, 1965: 37–8; syn. nov.

Through the kindness of Dr Jean Ghesquière, Menton, France, the ♀-holotype, ♂-allotype and a ♀-paratype, all slide-mounted, of *M. habrolepidis* have been examined. The slight differences in female antenna and fore wing which may be seen by comparing figs 1–3 with the figures and descriptions of Ghesquière (1960) and Ferrière (1965) are not useful as specific characters: South African specimens are at hand which show all these variations. The fore wing of the *habrolepidis* ♂-allotype is somewhat different from that of the female, just as illustrated by Ghesquière (1960), with the pattern somewhat obscured and blurred, not sharp-edged as in the females. This difference is associated with the small size of the allotype, the fore wing of which is about one-half as long as that of a well-grown South African male specimen. Several series of South African *exitiosa* contain a few very small males, about the size of the allotype, and the fore wing maculation of these tends always to be more or less blurred, in some cases almost precisely as in the allotype. There are therefore no characters by which *habrolepidis* may be distinguished from *exitiosa*, and the former name is accordingly placed in synonymy.

M. exitiosa is abundant and widespread in South Africa. It may be distinguished as indicated in the accompanying key. In the female antenna (fig. 2) the second club segment is longer than the first in all specimens examined (*vide* Rosen, 1967; *cf* Compere, 1936), and the club of the male antenna (fig. 3) usually but not always shows a trace of an intersegmental septum but is never fully divided in two segments. The fore wing is rather characteristically maculated (fig. 1) and small variations in size, shape and position of the hyaline areas occur.

M. exitiosa has been shown (Cilliers, in press) to be an important component of the insect fauna of South African citrus orchards. Primary hosts attacked on citrus include *Aphytis holoxanthus* DeBach, *Comperiella bifasciata* Howard, *Habrolepis rouxi* Compere and *H. aspidioti* Compere & Annecke. Homopterous hosts on citrus inhabited by *M. exitiosa* as a secondary parasite are *Aonidiella aurantii, Chrysomphalus aonidum, Coccus hesperidum* and (*vide* Catling, 1969) the citrus psylla *Trioza erytreae.* Other homopterous hosts from which material has been studied include:— Diaspididae: *Separaspis capensis, Quadraspidiotus perniciosus, Artemisaspis abdita, Selenaspidus ?articulatus, Rolaspis whitehilli;* Lacciferidae: *Tachardina affluens, T. actinella;* Asterolecaniidae: *Lecaniodiaspis tarsalis;* Coccidae: *Ceroplastes* elytropappi, *C. sinoiae, Coccus hesperidum.*

Outside southern Africa *M. exitiosa* is recorded from Israel (Rosen, 1962, 1965, 1966, 1967); it was described from Morocco (Ghesquière, 1960) under the name *M. habrolepidis,* and recorded under this name also from Egypt (Ferrière, 1965); and two samples from the Far East are at hand which we have confidently determined as



Figs 1–8. *Marietta* species. 1–3. *M. exitiosa* Compere. 1. Right fore wing (♀ T 2557–1). 2. Left antenna, female, inner aspect (T 2557–1). 3. Left antenna, male, inner aspect (T 2557–2). 4–8. *M. intermedia* spec. nov., paratypes. 4. Right fore wing (♀ T 3631–2). 5. Left antenna, female, outer aspect (T 3631–1). 6. Right mandible (♀ T 3631–1). 7. Right antenna, male, inner aspect (T 680–1). 8. Right fore wing (♂ T 680–1).

M. exitiosa: PHILIPPINE IS., viii.1968, H. D. Catling, ex *Diaphorina citri* on citrus (T 2720 10 ♀ 13 ♂); MALAYSIA: Kuala Lumpur, vii.1970, C. Tock-Hing (T 3618 1 ♀ 1 ♂).

Elsewhere in this article (p. 000) we have suggested that Risbec's two varieties (one named) of *M. marchali* Mercet may both refer to specimens of *M. exitiosa*. If this view proves to be correct, the known distribution of *M. exitiosa* will be expanded to include West Africa and Madagascar.

Marietta intermedia spec. nov., figs 4–8

In colour, and in several morphological characters, this species appears to fall between *M. exitiosa* and *M. marchali*. The fore wing maculation of the three species (figs 1, 4 and 9), and also the male antennae (figs 3, 7 and 11) serve to illustrate the transition.

FEMALE. Colour of dorsal part of head and thorax largely orange; face whitish to brownish-white with cheeks dusky brown to near mouth; temples concolorous with face; mandibles dark brown at apex; antenna with radicle whitish; scape whitish except for a dark brown ventrolateral mark near the middle; pedicel dark brown in basal one-third or so, distally whitish; funicle and club dark brown save apical one-third or so of basal club segment which is brownish-white; apex of club usually somewhat faded to brownish; mesonotum reddish- to yellowish-orange, the sutures more or less brown, the mesoscutum and scutellum with variable ill-defined areas which are more or less dusky; mesonotal setae dark brown; metanotal diamond brownish-white, outlined laterally in dark brown; sides and venter of thorax brownish-white; legs strongly maculated in dark brown and whitish; femora marked with brown patches and incomplete bands; fore tibia with two bands and apex narrowly dark brown; middle and hind femora each with three broad dark brown bands; tibial spurs, first and last two tarsal segments of all legs dark brown, remaining tarsal segments whitish; fore wing (fig. 4) infuscated and with areas of contrasting coarse and slender setae, the disc beyond speculum with 13 hyaline subcircular windows of which two are confluent with anterior margin and, generally, one with posterior wing margin; a partial fourteenth is in the angle between speculum and hind margin of wing; entire blade of wing somewhat darkened, only the windows and part of basal triangle hyaline or almost so; hind wing hyaline, very finely setose from near base to apex; gaster dark brown with whitish marks on each side segmentally arranged; exserted portion of gonostyli dark brown.

Length about 0,9 mm

Head about 2,5 times as wide as frontovertex at median ocellus; ocelli in about a right-angled triangle, the lateral pair removed from orbits by almost two diameters, a little closer to fronto-occipital margin; upper limits of toruli a little below lower eye level; mandible (fig. 6) with two strong acute ventral teeth and a retracted rounded upper one; antenna (fig. 5) with scape somewhat thickened medially, almost four times as long as wide; pedicel about one-half as long as scape; funicle with two subannular segments, the second a little larger than the first; club two-segmented, the second the longer, both with rhinaria; frontovertex cellulate-reticulate and with rather strong regularly arranged setae.

Thorax with mesoscutum wider than long, not quite as long on midline as scutellum; scutoscutellar suture transverse along mesoscutal margin, angled slightly anteriad on each side between parapsis and axilla; scutellum wider than long, broadly produced to a rounded apex caudally; metanotum fully exposed in dorsal view, with the usual diamond-shaped median area produced by subcutaneous ridges connecting the midline anteriorly and posterior margin sublaterally; hind margin of metanotum produced in a rounded salient over median part of propodeum; the latter short, closely articulated to hind margin of metanotum; thoracic dorsum cellulate-reticulate, the sculpture about equally raised on mesoscutum, scutellum, diamond area of metanotum, and central part of propodeum, less raised elsewhere; mesoscutum with about 8 + 8 setae in caudal one-half; parapsides each with 4 setae, and axillae each with one; scutellum with 2 + 2 setae; propodeum with a single seta lateral to each spiracle.

Legs not unusually modified, the middle tibial spur shorter than adjacent tarsal segment.

Fore wing (fig. 4) with two hyaline, or almost hyaline, windows between marginal vein and speculum, and with thirteen others distad to speculum in addition to a partial one at base of speculum on hind margin of wing; membrane of wing in windows densely but exceedingly finely, setose; remainder of wing save basal triangle partly, rather uniformly infuscated and with dense, coarse discal setae; basal triangle with a group of up to about 25 discal setae beneath apex of submarginal vein; marginal fringe shorter than in *exitiosa* but longer than in *marchali;* hind wing hyaline and with very fine, sparse, discal setae.

Gaster somewhat heart-shaped in dorsal aspect, the apex rounded, gonostyli exserted for a little less than one-half their length; ovipositor, as seen through the derm in cleared slide-mounts, extending forward to base of gaster or into thoracic cavity to about the level of hind margin of scutellum, the shaft 1,8–2,0 times as long as middle tibia, and 3,4–3,7 times as long as gonostyli; the latter twice, or a little more, as long as middle tibial spur.

MALE. Resembling the female in colour closely; antenna as in fig. 7, the club segments separated by a somewhat oblique to almost transverse septum but which is never peculiarly produced as in *marchali;* wings (fig. 8) more or less reduced, about two-thirds normal length.

MATERIAL EXAMINED. ♀-Holotype (T 3631) 69 ♀- and 48 ♂-paratypes with the following data: SOUTH AFRICA: Grahamstown, C.P., xi.1961, D. P. Annecke, with *Tachardina minor* on *Elytropappus rhinocerotis* (T 680, 16 ♀ 26 ♂); Somerset West, C.P., x.1969, H. P. Insley, with *Tachardina* sp. on *Elytropappus rhinocerotis* (T 3213, 6 ♀); Malmesbury, C.P., x.1969, H. P. Insley, with *Tachardina minor* on *Galenia africana* (T 3278, 1 ♀); Citrusdal, C.P., x.1970, H. P. Insley, with *Tachardina* sp. on *Struthiola dodecandra* (T 3631, 47 ♀ 16 ♂); Trawal, C.P., x.1970, H. P. Insley, with *Tachardina* sp. on *Galenia africana* (T 3637, 6 ♂).

Marietta marchali Mercet, figs 9–11

Marietta marchali Mercet, 1929: 111–4; Compere, 1936: 308, 313; Risbec, 1951: 396; Annecke & Insley, 1971: 35.

The five female specimens (T 3638, 3639) referred to by Risbec (1951: 396) have been examined in detail and found to agree closely with the South African females assigned here to Mercet's species.

Two other lots of material were studied by Risbec, one from Madagascar which he called "*Marietta marchali* Mercet, variété?" (Risbec, 1952: 147–50); and the other from Bambey, Senegal, which he described as "*Marietta marchali* Mercet, var. *senegalensis* n.var." (Risbec, 1954: 1052–3). We have seen none of this material but conclude from the published descriptions and figures that Risbec very probably had samples of *M. exitiosa* Compere before him, and not varieties of *M. marchali*.

The determination of the South African material detailed below as *M. marchali* rests on Mercet's (1929) original description. We do not know where the type material is. As understood here the species is readily identifiable by the following combination of characters.

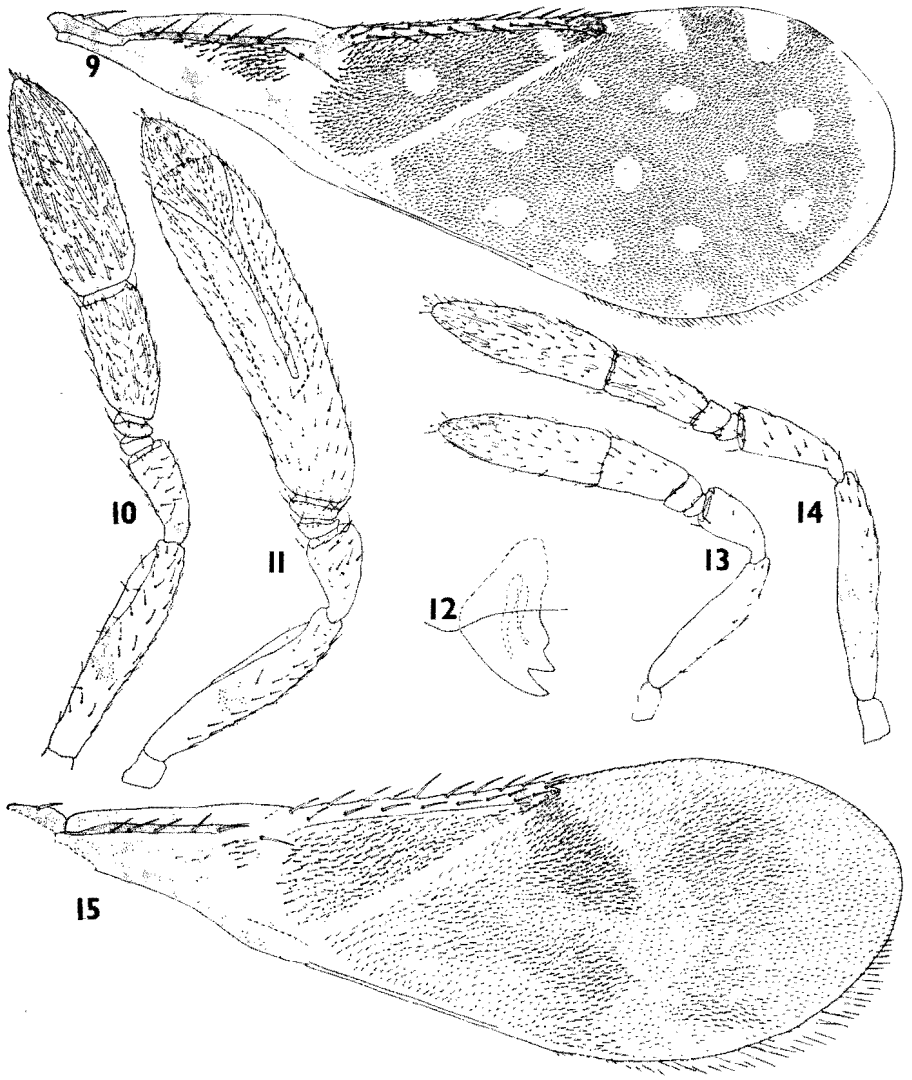
FEMALE. Head largely yellowish, thorax, legs and gaster dark brown with numerous silvery-whitish markings; fore wing distinctively maculated as in fig. 9, the basal triangle largely infuscated and containing 40 or more discal setae beneath distal part of submarginal vein; ocelli in about a right-angled triangle; antenna as in fig. 10, the scape somewhat thickened medially in certain views, but not ventrally expanded; ovipositor extruded with gonostyli at apex of gaster, about 3,0–3,5 times as long as gonostyli, a little more than twice as long as middle tibia; gonostyli about 2,5 times as long as middle tibial spur, exserted for about one-third of their length.

MALE. Much as in female except in sex characters, and antenna (fig. 11), which is remarkable for the exaggeratedly emarginate septum separating club segments; the emargination is on outer aspect of club, and along the edges of the emargination the first segment shortly overlaps the second which is produced backward in the emargination.

MATERIAL EXAMINED. 414 ♀ 179 ♂ with the following data:— SOUTH AFRICA: Pretoria, Tvl. iii.1962, J. Munting, with *Tachardina africana* on *Diospyros lycioides* (T 1427, 31 ♀ 4 ♂); Irene, Tvl, iii.1969, H. P. Insley, ex *Tachardina affluens* on *Diospyros lycioides* subsp. *guerka* (T 2994, 28 ♀ 27 ♂); Baviaanspoort, Tvl, ii.1961, D. P. Annecke, ex *Tachardina albida* on *Acacia karroo* (T 3698, 8 ♂); Naboomspruit, Tvl, iii.1970, H. P. Insley, ex *T. albida* on *A. karroo* (T 3440, 296 ♀ 107 ♂); Koringpunt, Tvl, iv.1969, H. P. Insley, with *Tachardina* sp. on *Acacia nilotica* subsp. *kraussiana* (T 3023, 1 ♀ 2 ♂); ex *Tachardina affluens* on *Euclea schimperi* and *E. crispa* (T 3066, 1 ♀ 1 ♂); Kalahari Gemsbok Nat. Park, ii.1961, D. P. Annecke, ex *Tachardina* sp. on *Rhigozum trichotomum* (T 366, 47 ♀ 29 ♂); Muden, Ntl, v.1961, D. P. Annecke, with *Ceroplastes mimosae* on *Acacia karroo* (T 3697, 5 ♀ 1 ♂); SENEGAL: Bambey, "ex Cochenilles sur Acacia seyal". "Marietta marchali Silv." [det. J. Risbec] (T 3638, 3 ♀); Bambey, "Hote?" "Marietta marchali Silv." [det. J. Risbec] (T 3639, 2 ♀).

Marietta taeniola spec. nov., figs 12–15

FEMALE. Colour much as in *M. hispida;* face and cheeks with dark brown bands as in that species, but the median one not continuous between toruli, curving ventrad lateral to toruli and connected in a narrow sinuate band beneath toruli; interscrobal prominence with a longitudinal brown mark on each side connecting with upper facial



Figs 9–15. *Marietta* species. 9–11. *M. marchali* Mercet. 9. Right fore wing (♀ T 3440–1). 10. Right antenna, female, inner aspect (T 3440–1). 11. Left antenna, male, outer aspect (T 3023). 12–15. *M. taeniola* spec. nov., paratypes. 12. Right mandible (♀ T 3749–1). 13. Left antenna, male, outer aspect (T 3749–2). 14. Left antenna, female, outer aspect (T 3749–1). 15. Right fore wing (♀ T 3749–1).

crossband; markings of frontovertex apparently similar to those of *M. hispida*, largely testaceous in freshly killed specimens with a narrow silvery-white band margining each orbit, a longitudinal concolorous mark on each side of anterior ocellus and a single one between lateral ocelli; a narrow transverse dark brown mark present on fronto-occipital margin directly caudad to each lateral ocellus; antennal radicle dark brown; scape whitish with a more or less plain band near base, and an often poorly defined dorsal patch beyond middle, the two sometimes more or less confluent; apex of pedicel whitish, that of each club segment testaceous, the antenna otherwise dark brown; thorax and legs closely similar to those of *M. hispida;* fore wing with a pattern of infuscation and of coarse and fine setae as in fig. 15; hind wing hyaline; gaster as in *M. hispida.*

Length about 0,9 mm

Head with ocelli in a trifle more than an equilateral triangle; toruli approximately equidistant from mouth, eyes and each other; mandible (fig. 12) with three teeth, the lower two deeply notched, upper one separated by a shallow, rounded notch, short, somewhat retracted; antenna as in fig. 14, the scape only slightly thickened medially; basal club segment narrower than distal one, both with rhinaria.

Thorax very much as in *M. hispida;* mesoscutum with about 7 setae on each side; propodeum with a single seta near each spiracle; sculpture and chaetotaxy otherwise as in *M. hispida.*

Legs without modifications, the middle tibial spur about two-thirds length of adjacent tarsal segment.

Fore wing distinctly maculated as in fig. 15, the infuscated areas carrying coarser discal setae than the contrasting hyaline areas; basal triangle with a group of up to about 21 discal setae near apex of submarginal vein; marginal fringe fully as long caudodistally as setae on marginal vein; hind wing uniformly and very finely setose.

Gaster a little longer than thorax, the ovipositor extruded at the somewhat truncated apex of gaster; relative lengths of ovipositor, styli, middle tibia and spur similar to those of *M. hispida.*

MALE. Similar to female except in sex characters; maculation of fore wing a little fainter and less well defined; antenna as in fig. 13, the basal club segment without rhinaria.

MATERIAL EXAMINED. SOUTH AFRICA: Citrusdal, C.P., x.1970, H. P. Insley, ex *Rhodesaclerda* sp. on *Viscum capense* (T 3603, 8 ♀- and 22 ♂-paratypes); same data except date and collector, ii.1971, D. P. Annecke (T 3749, ♀-holotype, 79 ♀- and 96 ♂-paratypes). The two series of type specimens were collected on the same plant. Some specimens, especially those of the earlier series (T 3603) are of small size, with fore wing maculation rather fainter and less contrasting than in larger specimens.

Two further series of specimens are at hand, one (T 3542, 13 ♀ 19 ♂) collected with the type-series of *M. hispida*, and the other (T 3696, 1 ♀ 7 ♂) with the following data: SOUTH AFRICA: Eshowe, Ntl, xi.1970, H. P. Insley, ex coccoid on *Combretum kraussii.* These two lots are identified as conspecific with *M. taeniola* but are not designated as types because of certain differences the status of which is not entirely clear. In the

fore wing the discal setae in the hyaline areas are distinctly finer than in the type series, most especially so in the subcircular spot beneath the basal part of marginal vein; discal setae near apex of submarginal tend to be more numerous (15–21) in the females than in those of the type series (up to about 12–14); brown marks on antennal scape better defined as a ventral patch basally and dorsal one distally.

Marietta hispida spec. nov., figs 16–18

FEMALE. Colour dark mahogany brown with distinct whitish or brownish-white stripes or bands on head, thorax and legs, and with pale spots on gaster laterally in segmental arrangement; frontovertex dull yellowish-brown, with a dark brown mark behind each lateral ocellus and with less distinct dark marks elsewhere; face and cheeks whitish with three transverse dark brown bands, the middle one interrupted by the toruli, the ventral one verging on mouth; antennal radicle dark brown; scape whitish with two dark brown circling bands, the lower one placed at the level of upper facial band when scape rests in scrobe; apex of pedicel whitish, that of each club segment fading to brownish, the antenna otherwise dark brown; apex of mandible black; pronotum dark brown with a yellowish-white transverse band along hind margin, separated from concolorous mark near each lateral angle; mesonotum longitudinally striped: mesoscutum with a median whitish stripe and two others on each side, none extending forward quite to pronotum, the sclerite otherwise dark brown; scutellum with a median whitish stripe and another on each side, separated from mesoscutal stripes by the thin dark brown scutoscutellar suture; median scutellar stripe extending caudad on to metanotum and propodeum; remainder of scutellum, metanotum and propodeum dark brown; legs with all coxae largely dark brown; fore femora and tibiae whitish, each with two dark brown bands or marks; apex of tibia also dark brown; middle and hind femora and tibiae whitish, each with three dark brown bands; middle tibial spur dark brown at base, fading to whitish near apex; fore tarsus brownish; middle and hind tarsi whitish save base of each narrowly, and apical segment of each which is dark brown; fore wing (fig. 16) lightly infuscated in a band across wing commencing at stigmal vein and in a further incomplete band separated from the former by an irregularly margined hyaline crossband; hind wing hyaline; gaster dark brown, with whitish spots on each side segmentally arranged.

Length about 1,0 mm

Head shrivelled in dry specimens, apparently a little less than one-half head width; ocelli apparently in a slightly obtuse-angled triangle; antenna (fig. 18) with scape subcylindrical, approximately five times as long as greatest width; pedicel about 2,5 times as long as apical width, almost as long as basal club segment; basal funicle segment longer ventrally than dorsally, wider than long; funicle II wider than long, somewhat oblique; club long, the second segment much longer than first, both with scattered rhinaria.

Thorax with pronotum short medially, slightly longer on each side; mesoscutum wider than long, with about 10 setae on each side placed in the dark brown areas; parapsides each with four setae; axillae with anterior margins slightly advanced, each with one seta; scutellum wider than long, broadly rounded posteriorly, with two setae on each side; metanotum fully visible from above, the diamond-shaped median area distinct in slide-mounted specimens; propodeum short medially, longer laterally, with a small median salient caudad to diamond-shaped area of metanotum, with two slender

setae near each spiracle; sculpture of mesonotum and of diamond-shaped area of metanotum consisting of cellulate reticulations, each generally 5- or 6-sided, rather strong in dark brown parts, weak in whitish areas, each cell enclosing one or more weak aciculations.

Legs not modified, with middle tibial spur about two-thirds length of adjacent tarsal segment.

Fore wing (fig. 16) with discal setae beneath submarginal vein numbering more than 50; discal setae in infuscated areas a little coarser than those in hyaline areas; marginal fringe extremely short, absent distally; hind wing setose from near base to apex, the setae very fine except beyond level of venation where they become slightly coarser.

Gaster, exclusive of ovipositor, longer than thorax, bluntly acuminate at apex, with ovipositor and gonostyli exserted for about the length of middle basitarsus; ovipositor extending from base of gaster to beyond apex, more than twice as long as middle tibia (about 24:11), about three times as long as each gonostylus; the latter more than twice as long as middle tibial spur (about 16:7), extruded at apex for about one-half their length.

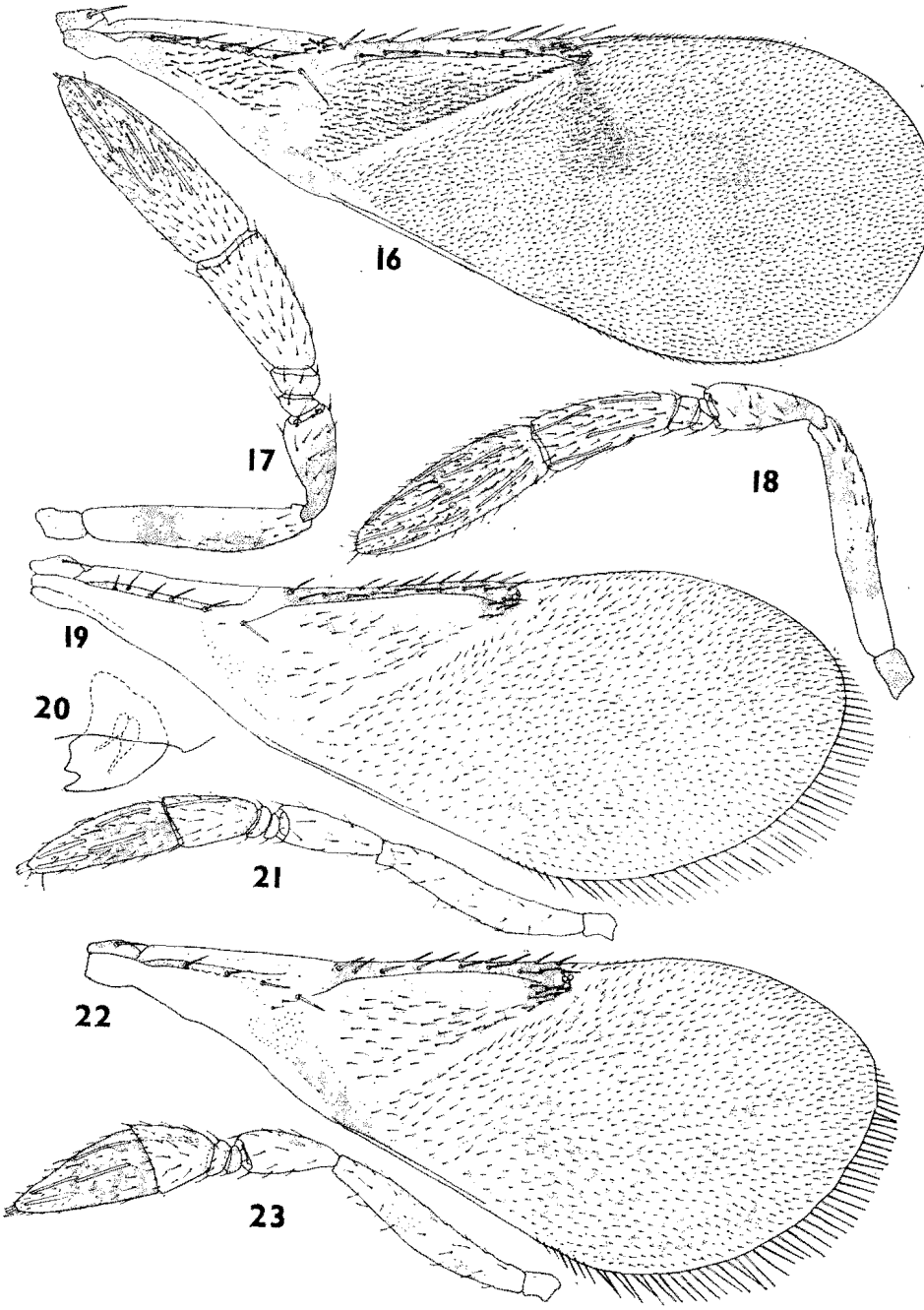
MALE. Differs from female mainly in sex characters; antenna as in fig. 17, the basal club segment lacking rhinaria, separated from the following segment by a transverse septum.

MATERIAL EXAMINED. ♀-Holotype, 30 ♀- and 27 ♂-paratypes (T 3604) with the following data:— SOUTH AFRICA: Hluhluwe (Game Reserve), Ntl, viii.1970, H. P. Insley, ex *Rhodesaclerda* sp. on *Loranthus dregei*.

Marietta nebulosa spec. nov., figs 19–21

FEMALE. Colour of frontovertex testaceous, face with orange admixtures, lower part of head round mouth darker, cheeks with a brown suffusion; apex of mandible dark brown; antenna with radicle and scape whitish except a dorsal brown patch on the latter; pedicel dorsally brown except at apex, whitish elsewhere; funicle segments, base of first club segment narrowly, and more than basal one-half of second club segment, dark brown, the club otherwise whitish; thoracic dorsum pale testaceous, pronotum with a dark brown spot dorsolaterally, silvery where it overlaps mesoscutum; the latter narrowly blackish-brown anteriorly beneath pronotum; scutoscutellar suture narrowly dark brown; caudal margin of scutellum very narrowly brown; metanotal diamond outlined in brown; sides of thorax whitish, the ventral one-third or so of mesopleurum blackish; pro- and mesosternum concolorous; legs whitish with dark brown spots and bands on femora; tibiae each with two broad dark brown bands; basal and apical segment of each tarsus dark brown; middle tibial spur concolorous, fading to whitish apically; fore wings with a distinct small cloud at apex of stigmal vein, and a pale brownish pattern of infuscation elsewhere as in fig. 19, the infuscation, viewed at high

Figs 16–23. *Marietta* species. 16–18. *M. hispida* spec. nov., paratypes. 16. Right fore wing (♀ T 3604–1). 17. Left antenna, male, outer aspect (T 3604–2). 18. Left antenna, female, outer aspect (T 3604–1). 19–21. *M. nebulosa* spec. nov., paratypes. 19. Right fore wing (♀ T 2933). 20. Left mandible (♀ T 2933). 21. Right antenna, female, inner aspect (T 3047). 22–23. *M. asaphia* spec. nov., paratypes. 22. Right fore wing (♀ T 2077–1). 23. Right antenna, female, inner aspect (T 2077–1). →



magnifications, formed of minute dense granules which frequently run together as minute thickened ridges in the blade; in hyaline areas the spicules are present but extremely faint; hind wing hyaline; gaster dark brown, with segmentally arranged whitish patches laterally; exserted gonostyli dark brown.

Length about 0,9 mm

Head with frontovertex a little more than one-fourth head width; ocelli in an acute-angled triangle, the lateral pair separated by about twice an ocellar diameter; antenna (fig. 21) with scape slender, fully five times as long as wide; pedicel longer than basal club segment; funicle segment I minute, longer ventrally than dorsally, II larger, obliquely transverse; club segment I slightly widened apically, almost twice as long as apical width, with rhinaria; II a little less than twice as long as I, with rhinaria; mandible (fig. 20) with a robust ventral tooth and a dorsal truncation.

Thorax with mesoscutum almost twice as long as wide, with about 7–8 slender setae on each side; parapsides each with three slender setae, the lateral one more robust; axillae each with a single seta; scutellum about twice as wide as long, not as long as mesoscutum, with hind margin broadly rounded, with three or more discal setae on each side; metanotum transverse, about one-half as long medially as scutellum, with diamond-shaped area well defined; propodeum with two slender setae lateral to each spiracle; mesonotum and diamond of metanotum cellulate-reticulate, the cells resolvable at 100× magnification, each containing numerous faint aciculations.

Legs without modifications; middle tibial spur fully three-fourths length of adjacent tarsal segment.

Fore wing (fig. 19) without or with a single discal seta beneath apex of submarginal vein; discal setae in remainder of wing uniformly slender, those between speculum and marginal vein a little longer than elsewhere; wing apex and caudodistal margin with fringe cilia which, at longest, are almost twice as long as setae on marginal vein; hind wing hyaline, with disc largely setose, the setae minute and extremely fine.

Gaster about as long as thorax in dried specimens, longer in slide-mounts; ovipositor extending from base or near base to beyond apex, a trifle more than twice as long as middle tibia, and less than four times as long as each gonostylus (about 15:4); the latter about 1,5 times as long as middle tibial spur, exserted for less than one-half their length.

MATERIAL EXAMINED. ♀-Holotype and 3 ♀-paratypes with the following data:— SOUTH AFRICA: Pietersburg, Tvl, iv.1969, C. J. Cilliers, with *Ceroplastes destructor* on *Maytenus* sp. (T 3047, ♀-holotype and 1 ♀-paratype); same data except date (xi.1968) and host plant (*Melia azedarach*) (T 2933, 2 ♀-paratypes).

Marietta asaphia spec. nov., figs 22–23

This species is very like the previous one, *M. nebulosa*. In the following description, characters are emphasized by which it differs from *M. nebulosa*.

FEMALE. Fore wing with a pattern of infuscation as shown in fig. 22, the fuscous areas produced as in *nebulosa* by minute granulations which may form fine reticulated ridges in the blade; distal part of leading edge infuscated, the infuscation curving round near apex of wing; discal setae hardly coarser in infuscated areas than in hyaline parts; ocellar triangle acute-angled but plainly less so than in *nebulosa*, the

lateral ocelli separated by about three times an ocellar diameter; antenna (fig. 23) with club distinctly more swollen medially, the basal segment strongly widened apically, slightly longer along dorsal edge than apical width (about 8:7); ovipositor, as seen in cleared slide-mounts, extending along apical two-thirds of gaster, about twice as long as middle tibia, and four times as long as each gonostylus; the latter about 1,5 times as long as middle tibial spur, exserted for somewhat less than one-half their length.

MATERIAL EXAMINED. ♀-Holotype and 3 ♀-paratypes (T 2077) as follows:— SOUTH AFRICA: Pearston, C.P., x.1965, J. Munting, ex *Diclavaspis ehretiae* on *Diospyros lycioides*.

Key to the South African species of *Marietta* Motschulsky

FEMALES

1 Fore wing beyond speculum uniformly setose, without contrasting areas of coarse and fine discal setae or infuscations . . . . . **connecta**
— Fore wing beyond speculum with contrasting discal areas of course and fine setae and/or variously infuscated 2
2 Disc of fore wing beyond speculum with a number of well defined, contrasting, subcircular hyaline areas, or windows, containing pale setae 3
— Disc of fore wing beyond speculum variously maculated but lacking well defined round or oval hyaline windows 5
3 Fore wing with hyaline areas large, not widely separated (fig.1); antennal scape about three times as long as wide (fig. 2); mesonotum dominantly yellow; (club of male antenna with septum incomplete) . . . . . **exitiosa**
— Fore wing with hyaline windows small, widely separated (figs 4 and 9); antennal scape almost or fully four times as long as wide; mesonotum dominantly dark brown or orange; (club of male antenna with intersegmental septum entire, transverse or otherwise) . . 4
4 Mesonotum dominantly orange; fore wing with up to about 25 discal setae beneath apex of submarginal vein; (antennal club of male with septum transverse, as in fig. 7) . . **intermedia**
— Mesonotum dominantly dark brown, the mesoscutum sometimes fading anteriorly to testaceous; fore wing with about 40 or more discal setae beneath apical part of submarginal vein; (antennal club of male as in fig. 11) . . . . . **marchali**
5 Mesonotum longitudinally striped in dark brown and whitish; fore wing with pale and slightly fuscous areas but not set in a reticulated pattern (figs 15 and 16) 6
— Mesonotum pale yellow; fore wing with pale and lightly infuscated areas arranged in a reticulated pattern (figs. 19 and 22) 7
6 Fore wing with marginal fringe long on caudodistal margin (fig. 15), with less than 25 discal setae grouped near apex of submarginal vein . . . . . **taeniola**
— Fore wing with marginal fringe very short (fig. 16); disc beneath submarginal vein largely setose, the setae numbering more than 50 . . . . . **hispida**
7 Pattern of fore wing as in fig. 19, the apex narrowly hyaline; antenna (fig. 21) with club slender . . . . . **nebulosa**
— Pattern of fore wing as in fig. 22, the apex except narrowly lightly infuscated; antenna (fig. 23) with club slightly swollen medially . . . . . **asaphia**

Centrodora crocata spec. nov., figs 24–25

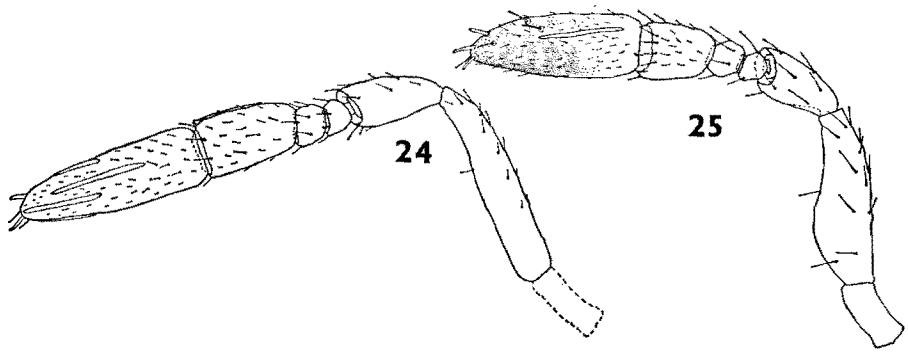
This species is rather similar to *C. penthimiae* Annecke (1965) and may be distinguished on characters of the antenna, as well as by its somewhat more slender body. A name was requested for the species by its collector, Mr A. D. Connell, Wattle Research Institute, Pietermaritzburg, Natal, who found it to be an egg parasite of the wattle-attacking cicadellid *Batrachomorphus cedaranus* (Naude).

FEMALE. Colour entirely yellow, only the ocelli dark red, apex of mandible brown; wings hyaline.

Length including exserted ovipositor about 0,8 mm

Head about twice as wide as median length in dorsal view, the frontovertex about as long as width at median ocellus; ocelli in a strongly obtuse-angled triangle; in front view, frontovertex dorsally slightly rounded, eye about twice as long as malar space; toruli subtriangular in outline, less than one-third of their length from genal suture and from mouth margin; antenna (fig. 24) with scape slender, about five times as long as wide; pedicel about twice as long as apical width, less than one-half as long as scape; funicle segments I and II each wider than long, I longer ventrally than dorsally, II slightly oblique; III a trifle longer than pedicel, and a little less than twice as long as wide; club longer than funicle, about as wide as funicle III, roundly acuminate apically; antenna finely and sparsely setose; club with several rhinaria, funicle III with a single dorsal one; mandible quadridentate, the upper tooth rounded and somewhat retracted; frontovertex with fine, scattered setae, and with a row of similar setae margining each orbit and extending down face to genal suture; face with 3 + 3 setae in rows on each side of interscrobal area.

Thorax much as in *C. penthimiae* but the mesoscutum distinctly longer relative to width, about 1,3 times as wide as median length (1,5 in *penthimiae*); scutellum slightly longer relative to width than in *penthimiae;* mesoscutum with two longitudinal submedian rows of setae, numbering 4–5 in each row, and with one longer seta near each lateral angle; longitudinal median groove present on mesoscutum and scutellum; mesoscutum



Figs 24–25. *Centrodora crocata* spec. nov. 24. Left antenna, female, outer aspect (holotype T 3372–1). 25. Right antenna, male, inner aspect (paratype T 3372–2). Figs 1–25 *del.* H.P. Insley.

and scutellum with very fine cellulate-reticulate sculpture, visible only in cleared specimens at high magnification.

Legs not specially modified, the middle tibial spur as long as adjacent tarsal segment.

Fore wing with venation reaching about halfway along length of wing; marginal vein shorter than submarginal; setation of wing very like that of *C. penthimiae;* hind wing as in *C. penthimiae.*

Gaster longer and narrower than in *penthimiae;* ovipositor occupying the greater part of its length; ovipositor about 1,8 times as long as middle tibia, about 3,4 times as long as each gonostylus; the latter a trifle more than twice as long as middle tibial spur and about two-thirds length of middle tibia.

MALE. Aside from sex characters, differing from the female in the antenna (fig. 25); club dark brown in distal one-half or more on ventral and lateral surfaces; funicle III distinctly shorter relative to width than in female, but longer than in *C. penthimiae.*

MATERIAL EXAMINED. ♀-Holotype, 35 ♀- and 12 ♂-paratypes with the following data:— SOUTH AFRICA: Pietermaritzburg, Ntl, ix.1961, A. D. Connell, ex eggs *Batrachomorphus cedaranus* (T 3308, 3 ♀ 2 ♂); Seven Oaks Distr., Ntl, ii.1970, A. D. Connell, on young wattles (T 3372, ♀-holotype, 32 ♀ 10 ♂).

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